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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,700	01/27/2006	Hirokazu Ooe	2936-0242PUS1	7918
2292 7590 08/31/2010 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER HECKERT, JASON MARK				
ART UNIT 1711		PAPER NUMBER		
NOTIFICATION DATE 08/31/2010		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

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mailroom@bskb.com

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 8/4/10 have been fully considered but they are not persuasive.
2. In regards to the "field of invention" argument, one of ordinary skill is capable of looking to other established technologies in the field of water treatment when considering the water treatment of a washing machine, especially when said water treatment technologies are based around the same fundamental apparatus, a pair of electrodes. Even though the use of polarity reversal is optional in Walsh, it is still published and available to one of ordinary skill. There is nothing precluding one of ordinary skill from trying polarity reversal, considering Walsh discloses it as a part of his invention that provides effective biocidal properties. The claimed elements were known in the prior art and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.
3. Examiner never ignored the teaching of adjustability. Claim 16 of Walsh recites, "....means for controlling the period of time during which each of the electrodes is operable as an anode or cathode". Examiner pointed to this on page 3 of the Final Action. Means for controlling a period time points to the adjustability that the applicant believes is lacking in Walsh or '484. It is maintained that Walsh teaches means for adjusting the time of such periods. Nothing has been ignored on behalf of the examiner. If the applicant's means are different from Walsh's, then they must be claimed.

4. In regards to claims 11-13, the combination of prior art teaches flow sensing, time adjustability, and a control unit with microprocessor. Thus the invention is entirely capable of performing the claimed functions, as the claims do not further define the structure of the apparatus.

5. In regards to claim 4, it appears that the applicant is asserting that modifying voltage is patentable. This is not found persuasive. The prior art teaches modifying the dissolution rate, which is related to the voltage across the plates. In order to control the dissolution rate, the prior art teaches the use of a variable resistor. Based on Ohm's law ( $V = IR$ ), it follows that modifying resistance in a fixed voltage system results in modifying current. It also follows that modifying voltage in a fixed resistance systems results in modifying current. This is general physics, not patentable subject matter. If the applicant has invented or constructed a new method or apparatus of adjusting voltage, then the applicant is advised to claim such matters. But a wealth of voltage adjusting means are known in the field of electronics, and the relationship between voltage, resistance, and current along with the relationship between voltage, current, and dissolution rate of ions are well documented. If the applicant would like to discuss these matters prior to future amendments or appeal, they are invited for interview.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 4, 10-13, 17-20, 24 rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-276484 ('484) in view of Walsh (CA 2242101). '484 clearly teaches a washing appliance containing an ion elution unit that generates silver ions between a pair of electrodes 121 and 122. Flow rate is detected by sensor 210. Power is provided by a DC power supply and controlled by a control unit 240 which includes a microcomputer. Voltage is supplied after detecting flow. Current and voltage are controlled by the control unit, which is capable of delivering a constant voltage or a variable voltage to water flowing through the ion unit. The DC power source is considered to be a drive circuit. The water flows through a feed valve 110. Thus, '484 teaches the limitations of claim 2 except for reversing polarities with an application halt period. Walsh discloses an ion elution unit for antimicrobial purposes comprising two electrodes 24 and 26. Current level to the electrodes can be modified by a variable resistor and appropriate control (page 4). Additionally, a timing mechanism can activate the cell for a period time, perform a halt period, and further reverse the polarity of the electrodes (page 4 and claim 16). This allows the unit to provide effective biocidal concentrations of ions without discoloration or damage to the appliance. It would have been obvious at the time of invention to modify '484 and include the functionality of reversing polarities with a halt period, as taught by Walsh, in order to purify the water stream. Claims 11-13 are regarded as intended use, however '484 also teaches utilizing control to apply power based on the measurements of the flow sensor 210.
8. In regards to claim 4, both '484 and Walsh disclose adjusting current to an appropriate level. Voltage modulation is well known to affect current by Ohm's Law. In

regards to claim 11, Walsh teaches control of the ion dissolution rate. Furthermore, the ion dissolution rate is related to the current, which both Walsh and '484 disclose as controllable parameter. '484 also teaches flow rate monitoring.

4. Claims 5-9, 14-16, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over '484 in view of Walsh and further in view of Robey OR JP 2000-343081 ('081). Neither '484 nor Walsh disclose including a current detector. Measuring electrical characteristics of an ion elution device is common in the art. Robey discloses including current sensing means (claim 16) which is connected to control means. The device is capable of detecting overload situations. '081 discloses including a voltage detection means to detect abnormalities in an ion system. When an abnormality is detected, the user can be notified by a buzzer (see abstract). Claims 5-9, 14-16 include language which is regarded as intended use of the apparatus. The manner in which an apparatus operates is not germane to the issue of patentability of the apparatus itself. *Ex parte Wikdahl* 10 USPQ 2d 1546, 1548 (BPAI 1989); *Ex parte McCullough* 7 USPQ 2d 1889, 1891 (BPAI 1988); *In re Finsterwalder* 168 USPQ 530 (CCPA 1971); *In re Casey* 152 USPQ 235, 238 (CCPA 1967). Furthermore, apparatus claims cover what a device is, not what a device does. *Hewlett-Packard Co. v. Bausch & Lomb Inc.* 15 USPQ 2d 1525 (Fed. Cir. 1990); *Demaco Corp. v. F. Von Langsdorf Licensing Ltd.* 7 USPQ 2d 1222, 1224-1225 (Fed. Cir. 1988). The combination of '484 and Walsh obviate the structures that allow polarities to be reversed in an ion elution device. Robey and '081 obviate including the structures that allow for current or voltage detection as means to detect abnormalities. The combination of said prior art is

believed to be capable of operating in the same manner as the applicant's invention, as it contains the same structures including control means and programmable microcomputers. Additionally, both Walsh and '484 disclose variable current and controlling dissolution rate based on such parameters. Additionally Walsh teaches variable time periods and application halt periods. Thus, the combination of the above references would be full capable of controlling time periods based on various measurements, such as current and voltage. It would have been obvious at the time of invention to modify '484 in view of Walsh, as stated above, and include means to detect electrical characteristics, such as current or voltage, as disclosed by Robey and '081, in order to detect abnormalities.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON HECKERT whose telephone number is (571)272-2702. The examiner can normally be reached on Mon. to Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/  
Supervisory Patent Examiner, Art  
Unit 1711

JMH